GOVERNMENT OF THE DISTRICT OF COLUMBIA
OFFICE OF PLANNING

Office of the Director

Memorandum

TO: District of Columbia Zoning Commission

FROM: Andrew Altman, Director
Office of Planning

ZONING COMMISSION
District of Columbia
CASE NO. 04-19
EXHIBIT NO. 12

DATE: September 10, 2004

SUBJECT: Preliminary Report for the Egg-Shaped Digester Facility (ZC #04-19)
District of Columbia Water and Sewer Authority
4500 Overlook Drive, S.W.

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APPLICATION

The District of Columbia Water and Sewer Authority (WASA) (Applicant) has petitioned the Zoning Commission for approval of a consolidated Planned Unit Development (PUD) in the C-M-3 District to facilitate the construction of its Egg-Shaped Digester Facility.

OFFICE OF PLANNING RECOMMENDATION

The Office of Planning supports the construction of this facility, as an important public service with significant environmental and financial benefits for the District of Columbia. Although OP had originally agreed that a PUD was the appropriate vehicle for seeking the necessary zoning relief, after reviewing the application and the final figures with regard to the height, OP believes that the appropriate relief would be a height variance by the Board of Zoning Adjustment (BZA).

OP therefore recommends **not setting down** the application as a Planned Unit Development but rather referring the application to the BZA for variance relief with an expedited hearing.

In brief, OP concludes the following:

- The proposed relief for multiple buildings on one site is not needed pursuant to § 2517;
- The only relief needed is height;
- The height requested is beyond the flexibility permitted within the PUD and therefore a variance is needed;
- It is administratively efficient for both the Commission and the applicant for the BZA to hear the variance;
- Due to the overall low elevation of the site and the high water table, OP believes that the variance test could be appropriately addressed.

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BACKGROUND

The District of Columbia Water and Sewer Authority is an independent authority of the District of Columbia government. WASA provides water distribution and wastewater conveyance and treatment to the District of Columbia. Additionally, the facility provides treatment services to Montgomery and Prince George's Counties in Maryland and Fairfax County in Virginia. Since 1966, WASA has made improvements and expanded its facilities to improve its water delivery and wastewater treatment systems. This proposed Egg-Shaped Digester Facility is part of the ongoing improvement plans.

The subject property is owned by the District of Columbia government and was rezoned from the C-M-2 to the C-M-3 district in 1972 to allow the Solids Processing Facility to rise to a height of 90.5-feet (Zoning Commission # 71-11, Order # 56). The application is subject to zoning because 11DCMR, Section 106.5 sets out the applicability of zoning to District-owned properties and Section 106.5 (b) triggers the zoning requirement for this project. It reads in part "*. . . any change or expansion in the use of land or building, or any new construction or additions to buildings shall be subject to zoning*;"

DESCRIPTION OF THE SITE AND SURROUNDING AREA

The subject property is part of the 159-acre Blue Plains Advanced Wastewater Treatment Plant in southwest Washington, D.C. The facility is developed with a number of buildings and facilities that are used in wastewater treatment and processing. The Plant is generally located south of Bolling Air Force Base and the U.S. Naval Research Laboratory; west of the Anacostia Parkway, DC Village, and Oxon Run Park; and east and north of the Potomac River. The uses surrounding the property are generally large public uses away from residential areas.

PROPOSAL

As part of its wastewater treatment and processing, WASA proposes to add a biosolids treatment facility to its current operations. This facility will enable WASA to fulfill part of its mission to modernize and improve the efficiency of its operations. The new facility will consist of eight, 145-feet high digesters that are able to contain a volume of 4.5 million gallons each, with a basement area that houses piping electrical and mechanical equipment, control rooms, storage and other operations.

On top of each digester is a Gas Dome Structure to support mechanical equipment and provide access to the interior of the digester for maintenance and inspection. The digesters are connected by above-ground walkways with three or four towers between the digesters to provide access from the ground to the walkways. The walkways are at the 110 foot level. The facility will also include four silos for digested biosolids. Several other buildings are proposed for the site including a digester control building, that will serve as a welcome area for visitors and assembly space for plant and staff; two, 4,600 square feet electrical equipment buildings; two gas holders to maintain adequate levels of gas pressure in the digesters; up to three waster gas flares; and space for a future power generation facility to utilize the gas generated as a byproduct of the digester process. New service roads to provide access to the new facilities will also be provided.

ANALYSIS

Relief Requested

Based on the information provided in the application OP concludes that the only relief needed is for height.

Multiple Buildings on a Lot

The applicant has requested flexibility from §3202.3, the provision restricting no more than one principal structure on a single lot. However, Section 2517 permits more than one principal building on a principal lot as a matter-of-right.

> *2517.1 This section shall permit two (2) or more principal buildings or structures to be erected as a matter of right on a single subdivided lot that is not located in, or within twenty-five feet (25 ft.) of, a Residence District.*

Therefore, it seems that the only relief necessary is for height, which is discussed below.

Unspecified Relief

The applicant in its submission has indicated that the principal reason for this application is to take advantage of the flexibility allowed under the PUD regulations as many of the proposed buildings and structures are not typical residential and commercial buildings. The applicant has stated that the main issues to be addressed in this PUD are issues relating to the height of the digesters and other accessory structures and the construction of more than one principal building on a lot (the entire Blue Plains facility is one lot).

The applicant's representatives have also suggested that a Zoning Commission approval of the project as a whole could include any unspecified relief that may be identified by the Zoning Administrator during permit review. OP notes that §2403.11 requires a table specifying the flexibility and relief required. OP does not believe that any time would be saved by pursuing a PUD with this assumption, since only that which is specifically requested in the PUD application is covered by the granting of that application relief

Height

The subject property is in the C-M-3 district that allows a height of up to 90feet. The PUD regulations do not provide for an increase in height in this zone district, except for the provisions of Section 2405.3, which allows the Commission to grant an increase in height of up to 5%. The egg digester system is composed of a number of parts of different heights. Although the gas domes are sitting on top of the egg digesters and house mechanical equipment, they have not been classified as roof structures. In the case of the elevator tower, the applicant has classified the top of the tower as a roof structure in the measurement of the height of the structure and has not only applied the 5% increase to the height of the principal structure (90 ft. to 94.5 ft.) but has also separately applied the 5% increase to the height of the roof structure (18.5 ft. to 19.5 ft.) in order to arrive at a total 118 feet, or 28-feet above the permitted 90feet.

The table below shows the heights of the structures above adjacent finished grade.

Table 1

	Height above finished grade	Excess Above permitted 90-Feet
Egg digesters	101 ft.	11 ft.
Elevated walkways	101 ft.	11 ft.
Gas Domes	107 ft.	17 ft.
Access Towers	118[1] ft.	28 ft.
Other structures	60 ft. or less	N/A

In order to minimize the relief needed for height, the applicant created an Assessment and Taxation Lot (A&T Lot). The A&T lot extends across the outdoor sludge composting facility and several internal roads in order to use the higher elevation of the Anacostia Freeway as the measuring point. The Anacostia Freeway is approximately 6.6-feet higher than the grade in front of the structures. The table below shows the heights of the structures measured from the Anacostia Freeway and the excess above the permitted 90-feet height.

Table 2

	Height based on grade at I-295	Excess above permitted 90-Feet
Egg digesters	94.4 ft.	4.4 ft.
Elevated walkways	94.4 ft.	4.4 ft.
Gas Domes	100.4 ft.	10.4 ft.
Access Towers	111.4 ft.	21.4 ft.
Other structures	60 ft. or less	N/A

OP recognizes that the only publicly dedicated right-of-way for this site is I-295. However, OP is concerned about using I-295 as a measuring point for the digesters because it is in conflict with the definition of Building Height (§199 11DCMR) and the recently adopted text amendment (ZC Case 02-35) that defined Natural Grade:

> ***Building, height of*** *- the vertical distance measured from the level of the curb opposite the middle of the front of the building to the highest point of the roof or parapet.*
>
> *The term curb shall refer to a curb at grade. In the case of a property fronting a bridge or a viaduct, the height of the building shall be measured from the lower of the natural grade or the finished grade at the middle of the front of the building to the highest point of the roof or parapet.*
>
> *In those districts in which the height of building is limited to forty feet (40 ft.), the height of the building may be measured from the finished grade level at the middle of the front of the building to the ceiling of the top story.*
>
> *In those districts in which the height of the building is limited to sixty feet (60 ft.), in the case of a building located upon a terrace, the height of building may be measured from the top of the terrace to the highest point of the roof or parapet, but the allowance for terrace height shall not exceed five feet (5 ft.).*

[1] Height includes roof structures

Where a building is removed from all lot lines by a distance equal to its proposed height above grade, the height of building shall be measured from the natural grade at the middle of the front of the building to the highest point of the roof or parapet. *(emphasis added)*

If a building fronts on more than one (1) street, any front may be used to determine the maximum height of the building; but the basis for the height of the building shall be determined by the width of the street selected as the front of the building.

In those districts in which the height of building is permitted to be ninety feet (90 ft.) or greater, the height of buildings shall be measured to the highest point of the roof excluding parapets not exceeding three feet (3 ft.) in height. (33 DCR 3979)

Natural grade *– the undisturbed level formed without human intervention or, where the undisturbed ground level cannot be determined because of an existing building or structure, the undisturbed existing grade.*

OP notes that the structures are proposed with a real height of 101 feet above their natural grade. The elevator towers rise an additional 17 feet. OP also notes that the metes and bounds description of the PUD is not a lot of record but only an AT &T lot, and the lot is essentially the entire Blue Plains property. There is no square number available. Based on the entire Blue Plains lot, the structures are removed from the lot lines a distance well in excess of the 101 feet. OP measures the distance to be approximately 200 feet from the nearest edge of the lot. It is important to note that there appears to be no conflict with any of the proposed structures and the Height Act of 1910.

OP is also concerned that there is not sufficient flexibility in the PUD process to permit the height necessary for all the structures. Section 2405.1 and 2405.3 read clearly that the height flexibility is limited to 5% for the maximum permitted, which in this case is 90 feet.

2405.1 *No building or structure shall exceed the maximum height permitted in the least restrictive zone district within the project area as indicated in the following table; provided, that the Commission may authorize minor deviations for good cause Section 2405.3:*

2405.3 *The Commission may authorize an increase of not more than five percent (5%) in the maximum height or floor area ratio; provided, that the increase is essential to the successful functioning of the project and consistent with the purpose and evaluation standards of this chapter.*

As shown on Table 2, the gas domes and access towers both exceed the 94.4-feet that the Zoning Commission may grant even using I-295 as the measuring point. Therefore, in order to obtain the additional height, the applicant would need a variance.

The Office of the Attorney General has advised OP that the Commission could review the variance simultaneously with a PUD if the applicant files a variance request for the excess height and demonstrates how the property meets the variance tests.

Recognizing the overall low elevation of the property, the engineering dictates of the structures locations and the high water table (which limits how far the digesters can be lowered), OP anticipates that the variance test could be appropriately addressed.

The Office of Planning also encourages the applicant to identify the components of the gas domes and the elevator towers to determine roof structure height. Although the gas domes are sitting on top of the digesters, they could be considered roof structures since they contain mechanical equipment. The applicant needs to submit information and a justification for considering the domes as separate structures. Similarly, the applicant has to demonstrate how the roof structures on the elevator towers meet the requirements of Section 400.7, and if need be, special exception relief may be requested.

COMPREHENSIVE PLAN AND PUBLIC POLICIES

There is no conflict with the use of the site for the digester structures. The Generalized Land Use Map recommends the subject site for local public facilities. The project is also consistent with other sections of the Comprehensive Plan including the following Major Themes of the Comprehensive Plan:

Specifically, the application is consistent with Chapter 4, Environmental Protection Element, of the Comprehensive Plan including:

- *Section 401, Environmental Protection Goal, which is to "resist threats to its overall quality, to act, to maintain and enhance its positive features in the interest of residents, workers, and visitors, and to protect residential communities from identified environmental hazards by implementing controls that prevent adverse impacts from incompatible uses."*
- *Section 404, Solid Waste Management, which "is to develop safe and effective methods for reducing, collecting, recycling, and disposing of solid waste and sewage sludge."*

Specifically, the project is consistent with Chapter 6, Public Facilities, of the Comprehensive Plan including:

- *Section 601, Public Facilities Goal, which is to "provide adequate and energy-efficient public facilities in good condition to support the cost-effective delivery of municipal programs and services, and to support economic development and neighborhood improvement objectives."*
- *Section 602, Adequate Service Delivery, which is to "ensure the construction, rehabilitation, and maintenance of facilities essential for public service delivery."*
- *Section 604, Increased Cost-Effectiveness In Public Facilities, which "is to improve the cost-effectiveness of public facility construction, maintenance, and rehabilitation."*

Public Benefits and Amenities

The applicant has submitted that the proposed amenities associated with this project are its superior architectural design and benefits to the public that will result from the improvement in wastewater treatment.

Superior Architectural Design

The digester has a unique "egg" shape with cladding panels that are aluminum or steel-colored near the top of the egg and soft yellow as it progresses toward the base, to modify the appearance of the eggs and reduce their mass. The colors are also consistent with the industrial nature of the facility and the connecting walkways have been designed to emulate bridges connecting the digesters. The brick on the other buildings will be similar to other existing buildings at Blue Plains.

Benefits to the Public

The District of Columbia will accrue both financial and environmental benefits from the project, in that the digesters provide more efficient operations, generating savings in operations and maintenance of the facility that reduces costs to both the City and retail customers. The environment will benefit due to the greater treatment capacity, a reduction in odor emissions, and a recyclable end product. The digesters will provide an additional major environmental benefit due to the reduction in the volume of biosolids from 1,300 wet tons per day to 650 wet tons per day, that will also lead to a reduction in truck traffic to the site as a consequence of the reduced volume of biosolids requiring transportation.

RECOMMENDATION

The Office of Planning concludes that the proposed digester facility will provide significant financial and environmental benefits to the District of Columbia, and is an important and needed public facility improvement. OP also acknowledges the unique design of the structure.

OP concludes that the project could be more efficiently processed as a variance due to the limited relief requested. The applicant and the Zoning Commission would save significant time.

The Office of Planning supports WASA's effort to improve the treatment facility and will continue to work with the applicant to clarify and resolve these issues, either as a PUD or a variance. OP recommends **not setting down** the application as a Planned Unit Development, but recommends referring the case to the BZA for consideration of a variance.

If the Zoning Commission decides to continue with the case as a PUD, OP strongly recommends that a variance be considered simultaneously with the PUD to avoid the unnecessary interpretation regarding how the structures heights are measured. OP is concerned that the proposed method of measuring the height from I-295 and the application of the 5% Commission discretion to the roof structure as well as the principal building, will result in a precedent that is in conflict with the intent of the recently adopted language governing measuring height and the definition of building height in §199.

AA/mbr AICP